

8-channel RF signal converter



The 8-channel RF signal converter is a superheterodyne architecture signal frequency conversion module. It accepts input intermediate frequency (IF) signals in the frequency range of 0.8 to 1.3 GHz and outputs high frequency signals in the frequency range of 3.75 to 8.25 GHz. The product has the characteristics of wide frequency of output signal, large adjustable range of power, excellent in-band flatness and low stray and phase noise. It provides reliable equipment support for superconducting quantum computing.

Features

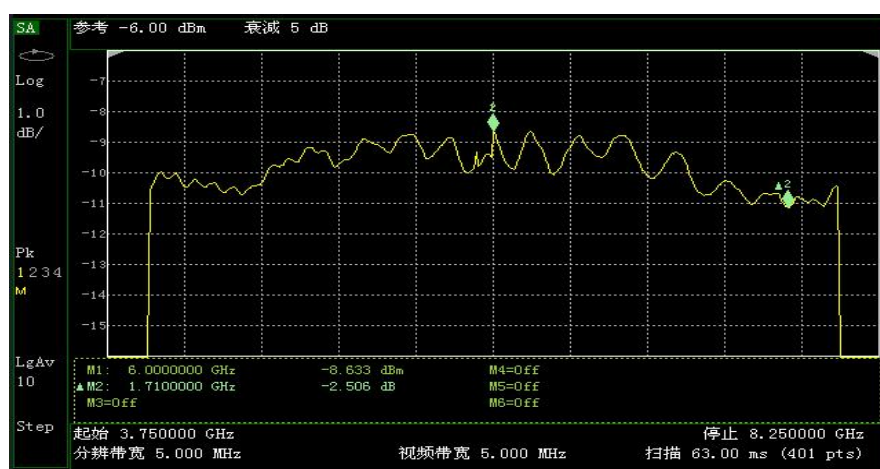
- ✧ 8 microwave transmission channel outputs
- ✧ Adjustable frequency range of the output signal: 3.75 to 8.25 GHz
- ✧ Adjustable power range of the output signal: -40 to -10 dBm, with a step size of 0.5 dB
- ✧ Power Flatness of the Transmitted Full Bandwidth: ≤ 1.5 dB
- ✧ Spurious in-band suppression of the output signal: ≥ 70 dBc
- ✧ Harmonic suppression of the output signal: ≤ -40 dBc

详细参数

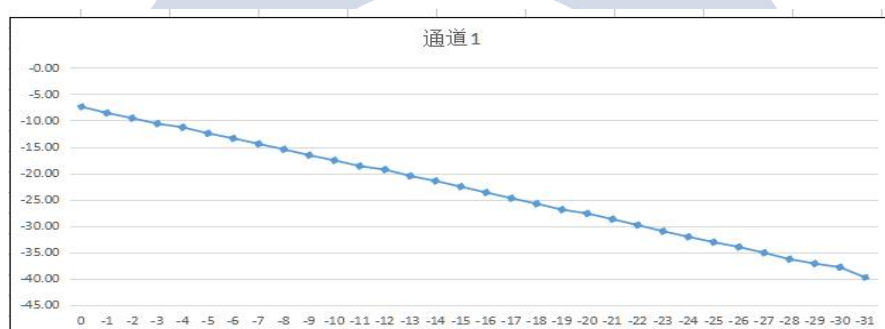
Performance Parameter	
Number of transmitting channels	8
Transmit signal frequency range	3.75~8.25GHz
Transmit signal power adjustable range	-40 to -10 dBm, step size of 0.5 dB
Power stability	$\leq 0.1\text{dB}$ (After starting for half an hour and stabilizing, test continuously for 1min)
Power Flatness of the Transmitted Full Bandwidth	$\leq 1.5\text{dB}$
Transmitting instantaneous bandwidth	500MHz
Instantaneous Bandwidth Flatness of the Transmitter	$\leq 2.5\text{dB}$
In-band spurious suppression of transmitted signals	$\geq 70\text{dBc}$
Harmonic suppression of transmitted signal	$\geq 40\text{dBc}$
Output signal phase noise	$\leq -110\text{dBc}@1\text{kHz}$; $\leq -140\text{dBc}@1\text{MHz}$; (Carrier signal frequency of 8 GHz, with sufficient conditions for the phase noise index of the local oscillator signal and intermediate frequency input signal.)
If input signal frequency range	0.8~1.3GHz (8 input ports)
If signal $P_{1\text{dB-in}}$	$\geq 0\text{dBm}$
Input Local Oscillator Frequency Range	LO1: 5.9/8.1GHz; LO2: 10.85~13.05GHz
General Parameter	
Working temperature	-10℃~50℃
Storage temperature	-45℃~85℃
Size (wide * high * deep)	483mm×89mm×550mm (2U standard chassis)

Test Data

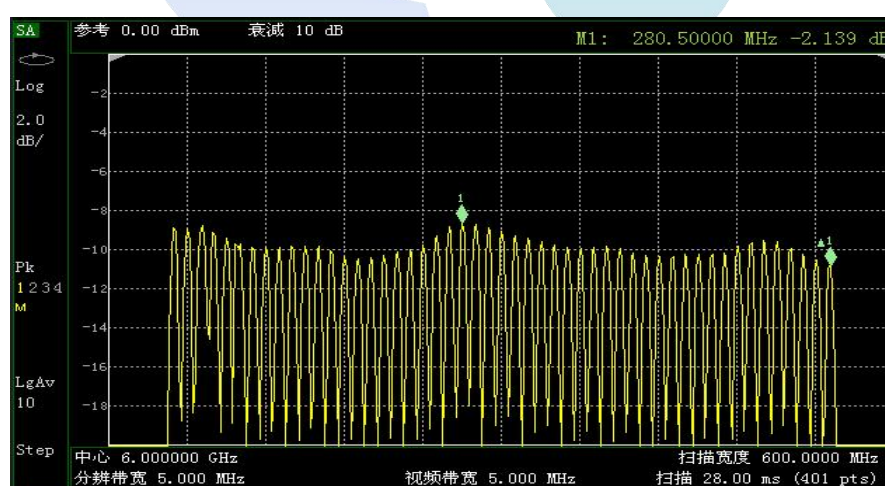
1. Transmission channel output power and flatness



2. Linearity of Power Attenuation in the Output of the Transmission Channel



3. Power Flatness within the Transient Bandwidth of the Transmission Channel



Note: The test equipment for the above data is Keysight N9020B